

CLAIMS

What is claimed is:

1. An image-correction method, comprising:

a distance calculating step of calculating the distance between the
5 coordinates of an image-constituting pixel and predetermined reference
coordinates;

a distance-correction value calculating step of calculating a
distance-correction value, by inputting for the variable in an N-order
function (N being a positive integer) the distance that has been calculated
10 in the distance calculating step.

a correction coefficient calculating step of calculating, based on a
table that represents correspondences between distance-correction values
and correction coefficients, a correction coefficient corresponding to the
distance-correction value that has been calculated in the
distance-correction value calculating step; and
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a pixel signal correcting step of correcting a signal for the pixel,
based on the correction coefficient that has been calculated in the correction
coefficient calculating step.

20 2. The image-correction method according to claim 1, comprising a
correction coefficient calculating step of calculating the correction
coefficient corresponding to the distance-correction value that has been
calculated in the distance-correction value calculating step, by, based on the
table that represents correspondences between distance-correction values
25 and correction coefficients, linear interpolation using

distance-correction-value data and correction-coefficient data that are stored in the table.

3. The image-correction method according to claim 1, wherein the reference coordinates in the distance calculating step, the coefficients for the variable in the N-order function in the distance-correction value calculating step, and the distance-correction values and correction coefficients stored in the table in the correction coefficient calculating step can be determined for each color component of the pixel.

10 4. The image-correction method according to claim 1, comprising a distance calculating step of calculating the distance, by regarding as the distance the sum of the distance between the coordinates of a pixel corresponding to an image signal and the one of two sets of predetermined reference coordinates, and the distance between the coordinates of the pixel and the other of two sets of predetermined reference coordinates.

15 5. An image-correction method, comprising:
a horizontal-direction distance calculating step of calculating the horizontal-direction distance between the coordinates of an image-constituting pixel and predetermined reference coordinates;
20 a horizontal-direction distance-correction value calculating step of calculating a horizontal-direction distance-correction value, by inputting for the variable in a first N-order function (N being a positive integer) the horizontal-direction distance that has been calculated in the

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horizontal-direction distance calculating step;

a first correction coefficient calculating step of calculating, based on a first table that represents correspondences between horizontal-direction distance-correction values and first correction coefficients, a first

5 correction coefficient corresponding to the horizontal-direction distance-correction value that has been calculated in the horizontal-direction distance-correction value calculating step;

a vertical-direction distance calculating step of calculating the vertical-direction distance between the coordinates of an

10 image-constituting pixel and predetermined reference coordinates;

a vertical-direction distance-correction value calculating step of calculating a vertical-direction distance-correction value, by inputting for the variable in a second N-order function (N being a positive integer) the vertical-direction distance that has been calculated in the vertical-direction

15 distance calculating step;

a second correction coefficient calculating step of calculating, based on a second table that represents correspondences between vertical-direction distance-correction values and second correction coefficients, a second correction coefficient corresponding to the vertical-direction distance-correction value that has been calculated in the vertical-direction distance-correction value calculating step; and

a pixel signal correcting step of correcting a signal for the pixel, based on the first correction coefficient that has been calculated in the first

20 correction coefficient calculating step and on the second correction coefficient that has been calculated in the second correction coefficient

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calculating step.

6. An image pickup apparatus, comprising:

a distance calculating means for calculating the distance between
5 the coordinates of an image-constituting pixel and predetermined reference
coordinates;

a distance-correction value calculating means for calculating a
distance-correction value, by inputting for the variable in an N-order
function (N being a positive integer) the distance that has been calculated
10 in the distance calculating step.

a correction coefficient calculating means for calculating, based on a
table that represents correspondences between distance-correction values
and correction coefficients, a correction coefficient corresponding to the
distance-correction value that has been calculated in the
15 distance-correction value calculating means; and

a pixel signal correcting means for correcting a signal for the pixel,
based on the correction coefficient that has been calculated in the correction
coefficient calculating means.

20 7. The image pickup apparatus according to claim 6, comprising a correction
coefficient calculating means of calculating the correction coefficient
corresponding to the distance-correction value that has been calculated in
the distance-correction value calculating means, by, based on the table that
represents correspondences between distance-correction values and
25 correction coefficients, linear interpolation using distance-correction-value

data and correction-coefficient data that are stored in the table.

8. The image pickup apparatus according to claim 6, wherein the reference coordinates in the distance calculating means, the coefficients for the variable in the N-order function in the distance-correction value calculating means, and the distance-correction values and correction coefficients stored in the table in the correction coefficient calculating means can be determined for each color component of the pixel.

10 9. The image pickup apparatus according to claim 6, comprising a distance calculating means for calculating the distance, by regarding as the distance the sum of the distance between the coordinates of a pixel corresponding to an image signal and the one of two sets of predetermined reference coordinates, and the distance between the coordinates of the pixel corresponding to the image signal and the other of two sets of predetermined reference coordinates.

10. An image pickup apparatus, comprising:
a horizontal-direction distance calculating means for calculating the horizontal-direction distance between the coordinates of an image-constituting pixel and predetermined reference coordinates;
a horizontal-direction distance-correction value calculating means for calculating a horizontal-direction distance-correction value, by inputting for the variable in a first N-order function (N being a positive integer) the horizontal-direction distance that has been calculated in the

horizontal-direction distance calculating means;

a first correction coefficient calculating means for calculating, based on a first table that represents correspondences between horizontal-direction distance-correction values and first correction coefficients, a first correction coefficient corresponding to the horizontal-direction distance-correction value that has been calculated in the horizontal-direction distance-correction value calculating means;

10 a vertical-direction distance calculating means for calculating the vertical-direction distance between the coordinates of an image-constituting pixel and predetermined reference coordinates;

15 a vertical-direction distance-correction value calculating means for calculating a vertical-direction distance-correction value, by inputting for the variable in a second N-order function (N being a positive integer) the vertical-direction distance that has been calculated in the vertical-direction distance calculating means;

20 a second correction coefficient calculating means for calculating, based on a second table that represents correspondences between vertical-direction distance-correction values and second correction coefficients, a second correction coefficient corresponding to the vertical-direction distance-correction value that has been calculated in the vertical-direction distance-correction value calculating means; and

25 a pixel signal correcting means for correcting a signal for the pixel, based on the first correction coefficient that has been calculated in the first correction coefficient calculating means and on the second correction coefficient that has been calculated in the second correction coefficient

calculating means.

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